

**Paper Reference 31760H**

**Pearson BTEC**

**Level 3 Nationals Extended**

**Certificate, Foundation Diploma,**

**Diploma, Extended Diploma**

**Total Marks**

**INFORMATION TECHNOLOGY**  
**UNIT 1: INFORMATION TECHNOLOGY**  
**SYSTEMS**

**Monday 18 January 2021 – Morning**

**Time: 2 hours plus your additional  
time allowance.**

**In the boxes below, write your name, centre  
number and learner registration number.**

<b>Surname</b>						
<b>Other names</b>						
<b>Centre Number</b>						
<b>Learner Registration Number</b>						

**V67696A**



**Pearson**

## ITEMS INCLUDED WITH QUESTION PAPER

- A separate Data Book.

## INSTRUCTIONS

- Answer ALL questions.
- Answer the questions in the spaces provided in this Question Paper or in the Data Book – THERE MAY BE MORE SPACE THAN YOU NEED.

## INFORMATION

- The total mark for this paper is 90.
- The marks for EACH question are shown in brackets – USE THIS AS A GUIDE AS TO HOW MUCH TIME TO SPEND ON EACH QUESTION.

## ADVICE

- **Read each question carefully before you start to answer it.**
- **Try to answer every question.**
- **Check your answers if you have time at the end.**

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**ANSWER ALL QUESTIONS.  
WRITE YOUR ANSWERS IN THE SPACES  
PROVIDED.**

**1. Jacky is a student living in shared accommodation with other students.**

**The student accommodation has access to a shared network with internet access.**

**The students use both wired and wireless connections to the network.**

**(a) Identify TWO benefits of using a wired connection rather than a wireless connection to a shared network.  
(2 marks)**

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1. continued.

**BENEFIT 1** \_\_\_\_\_

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**BENEFIT 2** \_\_\_\_\_

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**Turn over**

**1. continued.**

**(b) Identify TWO benefits of using a wireless connection rather than a wired connection to a shared network.**

**(2 marks)**

**BENEFIT 1** \_\_\_\_\_

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**BENEFIT 2** \_\_\_\_\_

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**1. continued.**

**(c) Jacky travels to college by train and uses her laptop to do internet research during her journey.**

**The train company provides a free internet connection, however Jacky prefers to set up a personal area network (PAN) between her laptop and mobile phone.**

**(i) Explain ONE advantage of using a PAN to connect to the internet.  
(2 marks)**

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## 1. continued.

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# Turn over

## 1. continued.

**(c) (ii) Explain ONE disadvantage of using a PAN to connect to the internet.**

**(2 marks)**

**(continued on the next page)**

# Turn over

## 1. continued.

**Jacky's friend has a tablet computer. Jacky would like to give her friend access to the PAN.**

**(c) (iii) Describe the steps that they need to follow to allow the friend to gain access. (4 marks)**

**(continued on the next page)**

# 1. continued.

**(continued on the next page)**

# Turn over

## 1. continued

**(d) The laptop has many utility programs installed.**

**Explain the purpose of the  
TWO given utility programs.  
(4 marks)**

# DISK CLEANUP

**(continued on the next page)**

# Turn over

## 1. continued.

# SOFTWARE FIREWALL

**(continued on the next page)**

# Turn over

**1. continued.**

**(e) Jacky uses proprietary software for her word processing and spreadsheet based college assignments. The software is out of date and Jacky is considering replacing it with open source software.**

**Discuss the implications of installing open source rather than proprietary application software.  
(8 marks)**

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**Turn over**

## 1. continued.

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## 1. continued.

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## 1. continued.

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1. continued.

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**(TOTAL FOR QUESTION 1 = 24 MARKS)**

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2. Miguel owns a company that produces software for primary school children. He works in an office with other programmers to do this.

They use PCs in the office and Miguel uses a laptop when visiting schools to demonstrate the software to the children.

Each device has:

- a graphical user interface (GUI)
- an optional command line interface (CLI)
- a single-user multi-tasking operating system (OS)
- a hard disk drive (HDD).

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## 2. continued.

**(a) Explain the purpose of a user interface.  
(2 marks)**

**(continued on the next page)**

# Turn over

## 2. continued.

**(b) Explain TWO benefits of using a GUI rather than a CLI. (4 marks)**

# BENEFIT 1

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# Turn over

## 2. continued.

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# Turn over

## 2. continued.

**(c) Explain TWO reasons why a single-user multi-tasking OS would be installed on each office PC.**

**(4 marks)**

# REASON 1

## 2. continued.

# REASON 2

**(continued on the next page)**

# Turn over

**2. continued.**

**(d) Each programmer stores designs on the internal hard disc drive (HDD) on their PC.**

**The data stored on their PCs can be at risk even when not connected to the internet.**

**(i) Explain TWO threats to data that can arise when a PC is not connected to the internet.**  
**(4 marks)**

**THREAT 1** \_\_\_\_\_

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## 2. continued.

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**2. continued.**

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**2. continued.**

**(d) (ii) Miguel is considering moving to a cloud storage system. One benefit of this would be to reduce the threats when storing data to their hard disk drives.**

**Discuss how moving to a cloud storage system would impact Miguel and the other programmers.**

**(6 marks)**

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## 2. continued.

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## 2. continued.

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**2. continued.**

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**(TOTAL FOR QUESTION 2 = 20 MARKS)**

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3. **SchFurn sells furniture to schools throughout the UK.**

**A manager and two administrative staff work in the company office and three sales staff work remotely.**

**Staff in the company office use PCs for administrative tasks.**

**Sales staff use laptops when they visit clients to show a range of furniture available and to collect order details.**

**SchFurn wants a system that will provide:**

- **wireless connection for three PCs**
- **a file server**
- **an email server**
- **secure remote wireless access for laptops.**

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**3. continued.**

**(a) On the blank space provided for Question 3 (a) in the separate Data Book, draw a diagram to show the setup of the system.**

**The diagram should include:**

- the devices used by the system**
- the connections between the devices**
- annotations including the devices and the types of connection.**

**(6 marks)**

**(continued on the next page)**

**3. continued.**

**(b) Glenda is a member of the sales staff. She works remotely from home using a laptop provided by SchFurn.**

**(i) Every week the sales staff and the office manager hold a meeting using voice over internet protocol (VoIP).**

**Codecs are used as part of VoIP.**

**Describe the use of codecs when using VoIP.  
(4 marks)**

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### 3. continued.

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### 3. continued.

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### 3. continued.

**(b) (ii) A VPN supports the ability of sales staff, such as Glenda, to work remotely.**

**Discuss the implications to SchFurn of using a VPN to allow sales staff to work remotely.**

**(6 marks)**

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# Turn over

### 3. continued.

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### 3. continued.

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**3. continued.**

**(c) SchFurn holds data about employees and client sales. Legislation is in place to ensure this data is protected.**

**Discuss the relevant legislation that protects this data, including the company and employee responsibilities.**

**(8 marks)**

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### 3. continued.

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### 3. continued.

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**3. continued.**

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**(TOTAL FOR QUESTION 3 = 24 MARKS)**

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4. **JKH Bank has several high street branches and provides customers with an online banking service.**

**Jason, a customer, accesses the online banking service via a portable device.**

**He has an up-to-date virus checker to protect his data from viruses and other malware when using the online banking service.**

**(continued on the next page)**

**4. continued.**

**(a) Discuss threats to Jason's data when he uses a portable device for online banking.**

**You should consider:**

- threats other than virus and malware attacks**
- steps that can be taken to reduce the threats.**

**(10 marks)**

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## 4. continued.

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## 4. continued.

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## 4. continued.

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# Turn over

**4. continued.**

**(b) JKH Bank is considering closing all high street branches and moving solely to its online banking service.**

**Analyse the implications, other than security of data, for JKH Bank moving to online banking only.**

**You should consider the implications for:**

- **customers**
- **bank employees**
- **JKH Bank.**

**(12 marks)**

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## 4. continued.

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## 4. continued.

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## 4. continued.

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## 4. continued.

**(TOTAL FOR QUESTION 4 = 22 MARKS)**

# **TOTAL FOR PAPER = 90 MARKS**

END